CARDINAL
RESOURCES

July 19, 2006
Project No. 104-0012

Ms. Maria Jon
U.S. Environmental Protection Agency
Emergency & Remedial Response Division
Eastern New York Section
290 Broadway
New York, New York 10007

May 2006 Sampling Report
Carroll & Dubies Superfund Site
Town of Deerpark, Orange County, New York

Dear Ms. Jon:

Please find enclosed three copies of the *May 2006 Sampling Report, Carroll & Dubies Superfund Site, Town of Deerpark, Orange County, New York*. This report summarizes the methods and results of the second round of groundwater sampling for 2006, completed in accordance with the approved August 2005 supplemental sampling plan. The next round of sampling is tentatively scheduled for August. I will notify you via email when we have a firm date for that abbreviated sampling round.

We believe that the data in this report continues to show stable-to-declining concentrations of volatile organic constituents in groundwater and the continued protectiveness of the OU1/OU2 remedies for human and ecological receptors.

Do not hesitate to call (412.374.0989) or email (bjones@cardinalres.com) if you have questions about this report.

Sincerely,

CARDINAL RESOURCES LLC

Barbara H. Jones
Principal

cc: Carroll & Dubies PRP Group
John A. Helmeset - NYSDEC
Ken Karwowski - USFWS
Fay S. Navratil - NYSDOH
Michael F. Rivara - NYSDOH

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CARDINAL

May 2006 Sampling Report

Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Prepared for:

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Jonathan A. Murphy, Esq.

and

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Project No. 104-0012-0300

July 2006

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1.0 Introduction

This report summarizes the methods and results of a field sampling program performed in May 2006 at the Carroll and Dubies Superfund Site (Site), Town of Deerpark, Orange County, New York. The work followed the August 2005 *Supplemental Sampling Work Plan* (work plan) approved by the United States Environmental Protection Agency (U.S. EPA). The May sampling and analysis program was limited to seven monitoring wells (B Series), OW-2, OW-5, OW-6, OW-17, OW-23, OW-24, and OW-25. The purpose this abbreviated sampling program was to continue to document the southeastern extent of the volatile organic compound (VOC) plume in the vicinity of OW-2, OW-5, and OW-6.

1.1 Site Setting

The three-acre Site is located in the Town of Deerpark in Orange County, New York, which is approximately 3,000 feet northeast of the City of Port Jervis, New York (Figure 1). The Site is situated on the northwestern flank of the Neversink Valley. Gold Creek lies approximately 1,500 feet to the east, and the Neversink River is located approximately 2,000 feet beyond Gold Creek.

The Site is underlain by sand and gravel deposits of glacial and glaciofluvial origin. Groundwater monitoring wells on the Site have been completed in the outwash unit, found above a low-permeability till zone that functions as an aquitard. The outwash unit consists of fine to coarse sand with fine to coarse gravel. The direction of groundwater flow is generally toward the southeast.

1.2 Land and Resource Use

The immediate surrounding area includes undeveloped woodlands to the north; undeveloped woodlands and a sand and gravel quarry pit to the northeast; the closed City of Port Jervis landfill, the Orange County Transfer Station, and a concrete products fabrication company to the south; and a sparsely vegetated, shale bedrock hillside to the west. In 2004, the City of Port Jervis began a small sand and gravel operation on land it owns, immediately to the southeast of the former lagoons, in the vicinity of OW-5 and OW-6 (Figure 2).

1.3 History of Waste Disposal and Contamination

In 1971, the three-acre Carroll and Dubies Site began operating as a disposal facility consisting of a series of lagoons. The majority of wastes disposed in the lagoons were septic waste, municipal sewage sludge, and solid waste. The Site also received liquid industrial wastes from approximately 1971 to 1979.

Over time, waste constituents in the lagoons leached into groundwater and affected the outwash aquifer. VOCs were of particular concern because of their dispersion in the aquifer and relative risk. Benzene, vinyl chloride, and other VOCs were found through a series of investigations to exceed drinking water standards in Site wells.

1.4 Overview of Remedies

The remedies selected for the Site were defined by two operable units, the waste lagoons themselves, and the impacted groundwater. Remedies were selected and executed to remove wastes from the lagoons, restore the Site to a safe and stable condition, and promote and track improvements in groundwater quality.

1.4.1 OU1 Remedy

The goals of the OU1 remedy conducted in 1999 were to prevent further leaching of contaminants into groundwater, and to reduce the risks to potential future workers at the Site who could come in contact with lagoon wastes. The steps in this process were:

- Excavation of all wastes from Lagoons 1, 2, 3, 4, 6, 7, and 8, along with surrounding soils that exceeded specified levels for indicator chemicals.
- Appropriate management of all excavated wastes and soils.
- Placement of imported clean fill in the excavations, followed by grading for drainage control and vegetation.

1.4.2 OU2 Remedy

The goals of the ongoing OU2 remedy, which was initiated in 1999, have been to use natural attenuation to reduce or eliminate the risks associated with the ingestion of Site groundwater for future Site workers and to protect Gold Creek from Site-related impacts. The steps in the program are:

- Execution of a groundwater monitoring program in accordance with Work Plans and other documents prepared for the project and approved by the U.S. EPA.
- With each sampling round, a report is prepared for U.S. EPA that documents the progress made in achieving the remedial goals.

1.5 Overview of February 2006 Field Program

A supplemental sampling program was initiated in February 2006 in response to the five-year review. Part of the program was to install two new monitoring wells, OW-24 and OW-25, east and south of OW-2, OW-5, and OW-6 (Figure 2), to determine the extent of the chlorinated VOC plume in the vicinity of OW-2, OW-5, and OW-6. Two existing monitoring wells that were not part of the ongoing groundwater monitoring network, OW-17 and OW-23, downgradient and to the west of OW-2, OW-5 and OW-6, were also redeveloped and sampled. The February 2006 sampling program found that the chlorinated VOC plume did not extend to OW-17, OW-24, or OW-25, and that the low detections in OW-23 did not exceed state or federal groundwater criteria. A subset of Site wells, or B Series wells (OW-2, OW-5, OW-6, OW-17, OW-23, OW-24, and OW-25), were sampled in May 2006 to continue to evaluate trends through the hydrologic cycle.

Detailed results and analysis of the February 2006 program are provided in *February 2006 Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York* (Cardinal Resources, April 2006).

2.0 Groundwater Sample Collection

This section describes methods used to collect groundwater samples for analysis. The results of the groundwater sampling and analysis program are provided in Section 3.0.

2.1 Groundwater Elevations

Before sampling began, groundwater elevations for all site wells were determined from measured depths to water from the reference point elevations. The depth to groundwater was measured using a Solinst® electronic water-level meter and recorded in the field logbook to the 1/100th of a foot. Surface water elevations at three monitoring locations were measured at the same time.

2.2 Equipment

Dedicated low-flow bladder pumps were used to purge and sample OW-2, OW-5, and OW-6. OW-17, OW-23, OW-24, and OW-25 were sampled using a downhole bladder pump that was decontaminated initially and after sampling each well by:

- Washing with low phosphate detergent and tap water
- Rinsing with tap water
- Rinsing with deionized water
- Rinsing with hexane
- Final rinse with deionized water
- Air drying

Clean disposable tubing and a clean disposable bladder were used for each well sampled with the bladder pump.

2.3 Well Purging and Sampling

All wells were purged using low-flow (100 to 200 milliliters per minute [mL/min]) techniques. During purging of each monitoring well, temperature, dissolved oxygen, redox potential, specific conductance, pH, and turbidity were monitored and recorded on field forms in average intervals of 5 minutes. Groundwater field parameters were measured with a YSI Model 556 MPS-10 multi-parameter unit equipped with a flow-through cell and a Lamotte Turbidity Meter Model 2020, which were calibrated prior to sampling activities. The goal was to obtain three consecutive readings of the field parameters within the following ranges:

- ±1.0 degree centigrade (°C) for temperature
- ±10% or ±0.3 milligrams per liter (mg/L) for DO (whichever is greater)
- ±10 millivolts (mV) for redox potential (redox)
- ±3% for specific conductance (conductivity)
- ±0.1 for pH
- ±10% or ±2 NTUs for turbidity (whichever is greater)

The final stabilized readings prior to sample collection for each of the monitoring wells are provided in Table 1. Groundwater purged from the monitoring wells was generally clear and contained little suspended sediment. When purging was complete, groundwater samples were collected at a flow rate of between 100 and 200 mL/min directly from the pump tubing. Samples were placed immediately on ice for overnight shipment to Severn Trent Laboratories (STL), North Canton, Ohio.

3.0 Groundwater Results

This section describes the results for monitoring wells sampled in May 2006. For a detailed discussion of site-wide groundwater conditions, refer to the *February 2006 Sampling Report.*

3.1 Groundwater Elevations

The groundwater elevations for this sampling round are presented in Table 2. Associated groundwater elevation contours and elevations of adjacent surface water bodies are shown in Figure 2. Measurements of surface water elevations were collected on the same day that the monitoring wells were gauged.

The groundwater flow direction on site is toward the southeast in the direction of Gold Creek. The groundwater gradient across the former lagoon site is approximately 0.080. This gradient transitions to a lower gradient, at about the location of the towpath. From the towpath to Gold Creek, the gradient is very shallow, approximately 0.007. The steeper gradient on the western side of the site is due to the depth to bedrock along the valley wall. As the depth to bedrock increases towards the valley floor, the thickness of the alluvial fill increases and the groundwater gradient flattens.

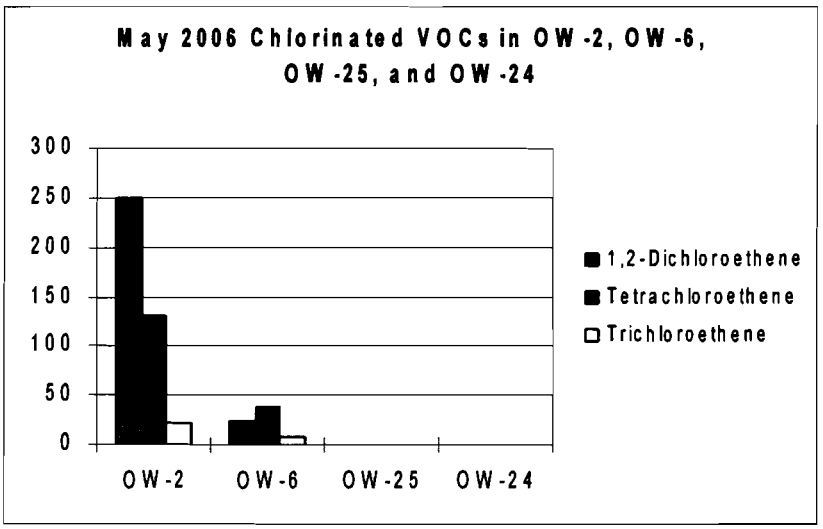
3.2 Groundwater Quality Results

Detected groundwater VOC analytes from the May sampling event are presented in Table 3 and shown in Figure 3. Laboratory analytical reports, including marked Form Is from the data validation process, are included in Appendix A in hard copy. An electronic copy of the entire data page is also provided. Historical data of detected organic compounds have been combined with the most recent data and are presented in Appendix B.

A variety of monitored natural attenuation (MNA) field and laboratory parameters were analyzed in groundwater (Table 4). These parameters are general indicators of geochemical conditions conducive to degradation of chlorinated and other VOCs. Patterns of MNA indicators by area were discussed in detail in the *Supporting Documentation for Five-Year Review* (Cardinal Resources, March 2005), along with an evaluation of how those patterns may relate to contaminant distribution within the groundwater plume.

During the May 2006 sampling program, VOCs were not detected in OW-17 or OW-25. Low estimated concentrations of VOCs below the reporting limits were detected in OW-23 and OW-24. Chlorinated VOCs in concentrations exceeding regulatory limits were detected in OW-2, OW-5, and OW-6. The VOC concentrations in OW-2, OW-5, and OW-6 are within the ranges that have been previously reported.

The results show that VOC impacts at OW-2, OW-5, and OW-6 are localized and do not extend to OW-17, OW-24, or OW-25. 1,2-Dichloroethene, trichloroethene, and tetrachloroethene, the three primary chlorinated VOCs in OW-2, OW-5, and OW-6, were not detected in OW-17, OW-24, or OW-25. The following graph illustrates the decline in chlorinated VOCs along the groundwater flow line from OW-2 to OW-24:



In OW-2 and OW-6, chlorinated VOC concentrations are stagnant (Figure 4). Geochemical conditions that include low total organic carbon (TOC), nondetectable methane, high dissolved oxygen, and relatively high redox (Table 4) in the area of these wells are not conducive to reductive dechlorination.

In OW-5, where groundwater is generally higher in methane and TOC, lower in dissolved oxygen, and more reduced (lower redox), conditions are more amendable to reductive dechlorination; chlorinated VOCs in general are trending downward (Figure 5).

4.0 Data Quality Review

Data quality review, also called data validation, was performed on the analytical data package to assure that quality and usability requirements were met.

4.1 Introduction

A Tier II data quality review of the sample data package was completed using U.S. EPA guidelines. The Tier II data evaluation consisted of a review of data package completeness and a quality control (QC) review, as summarized in the QC forms provided by the laboratory, covering:

- Signed transmittal page
- Data package narrative
- Sample transmittal documentation
- Standard QC forms for:
  - Surrogate recovery
  - Matrix spike/matrix spike duplicate (MS/MSD) recovery
  - Laboratory check samples
  - Method blank summary
  - Instrument performance check
  - Internal standard summary and retention time (RT) summary
  - Initial calibration data
  - Continuing calibration data
- Form Is and raw data for field samples, blanks, laboratory control samples, MS/MSDs
- Copies of logbook pages documenting sample preparation, extract transfer, instruments, and sample tracking
- Holding times
- Form Is and raw data for field and QC samples
- Field duplicates and field, trip, and decontamination blanks.

4.2 Results of Data Review

Refer to Appendix C for Tier II data review summary tables (volatile organic analysis [VOA]), dissolved gases, and general chemistry) for the sample delivery group (SDG), 6E 24140. The hand-marked, qualified Form Is are provided in Appendix A with the

laboratory reports. Results in Table 3 reflect the qualified data. The data qualifier used as a result of the data review is:

- U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

The data package was complete and appropriately organized, and all relevant supporting information was provided. Holding times were met for all analyses.

4.2.1 Field QC Samples

The field QC samples for VOC analyses were duplicates; one duplicate pair; one MS/MSD pair; one decontamination blank for the pump used for OW-17, OW-23, OW-24, and OW-25 (pump rinsate): two field blanks for VOCs, and two trip blanks for VOCs. A field blank was collected for each sampling day, and a trip blank was included with each sample cooler. OW-17 was the sample used for MS/MSD and duplicate analysis. Results were within QC limits.

4.2.2 Data Qualifications

Data qualification was minor; no results were rejected. Low concentrations of the common laboratory contaminants acetone and methylene chloride were detected in laboratory blanks, trip blanks, field blanks, and the rinsate blank (water for field and final rinsing of equipment blanks was provided by the laboratory). Using U.S. EPA data validation methods, detections of these compounds in the associated field samples were qualified as appropriate. Detects below the blank 10x (common laboratory contaminants) action levels in the associated samples were qualified as U at the reporting level. The samples qualified were:

- OW-2 - Methylene chloride result was qualified as 8.0 U ug/L, based on detection in laboratory blank
- OW-6 - Methylene chloride result was qualified as 1.7 U ug/L and acetone as 17 U ug/L, based on detection in laboratory blank

4.2.3 Data Quality and Usability

The data review process indicates that the analytical results are of acceptable quality, and no results have been rejected.

5.0 Summary and Conclusions

One of the goals for the *Supplemental Sampling Work Plan* (Cardinal Resources, 2005), which was the basis for this sampling program, was to verify the southeastern extent of the VOC plume in the vicinity of OW-2, OW-5, and OW-6.

The February 2006 and May 2006 rounds of field activities show that the VOC plume in the area of OW-2, OW-5, and OW-6 is localized does not extend to the southeast, and that the overall OU1 and OU2 remedies continue to be protective of human health and the environment. The evidence is:

- Chlorinated VOCs were not detected in OW-17, OW-24, and OW-25, east and southeast of OW-2, OW-5, and OW-6.
- Chlorinated VOC concentrations in groundwater in OW-2 and OW-6 are stable and declining in OW-5.

The next round of sampling (groundwater only) is scheduled for August 2006. In accordance with the approved plan, the August 2006 sampling round will include 18 monitoring wells:

MW-1	OW-10R	OW-19
MW-4	OW-13R	OW-21
OW-2	OW-15	OW-22
OW-5	OW-16	OW-23
OW-6	OW-17	OW-24
OW-8	OW-18	OW-25

6.0 References

Cardinal Resources, Inc., April 2006, *Sampling Report, Carroll and Dubies Superfund Site, Town of Deerpark, Orange County, New York.*

Cardinal Resources, Inc., August 2005, *Supplemental Sampling Work Plan, Carroll and Dubies Superfund Site,* Prepared for Kolmar Laboratories, Inc. and Wickhen Products, Inc.

Cardinal Resources, Inc., March 2005, *Supporting Documentation for Five-Year Review, Carroll and Dubies Superfund Site,* Prepared for Kolmar Laboratories, Inc. and Wickhen Products, Inc.

Tables

Table 1
Groundwater Field Stabilization Parameters
May 2006
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well ID	Date	Temperature (°C)	Dissolved Oxygen (mg/L)	Redox (mV)	Specific Conductance (uS/cm)	pH (standard units)	Turbidity (NTUs)
OW-2	05/23/06	11.27	3.27	67.9	158	5.73	1.0
OW-5	05/23/06	11.90	1.45	23.1	286	6.19	0.9
OW-6	05/23/06	12.33	5.79	75.1	92	5.96	1.1
OW-17	05/24/06	10.66	1.02	9.9	346	6.68	1.0
OW-23	05/23/06	12.24	0.84	-41.5	522	7.01	19.9
OW-24	05/24/06	11.23	3.52	3.8	207	7.44	53.8
OW-25	05/23/06	10.24	9.09	103.2	110	6.58	33.9

Notes:
mg/L = milligrams per liter
mV = milliVolts
uS/cm = microsiemens per centimeter
NTU = nephelometric turbidity units

Table 2
Groundwater and Surface Water Elevation Data[1]
May 23, 2006
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well No.	Top of Casing Elevation or Staff Gauge[2]	Screened Interval	Depth to Groundwater or Surface Water	Groundwater or Surface Water Elevation
MW-1	469.39	28.5 - 43.5	23.41	445.98
MW-4	470.13	35.3 - 50.3	41.77	428.36
OW-2	472.33	30.0 - 47.0	40.27	432.06
OW-3	472.70	30.0 - 46.5	41.80	430.90
OW-4	473.33	26.5 - 27.5	35.08	438.25
OW-5	459.85	25.5 - 45.5	27.96	431.89
OW-6	464.40	31.4 - 51.4	32.50	431.90
OW-8	464.63	34.6 - 54.6	32.55	432.08
OW-9	472.91	25.3 - 35.3	28.30	444.61
OW-10R	469.27	29.0 - 39.0	27.76	441.51
OW-13R	457.69	25.0 - 35.0	25.55	432.14
OW-15	472.05	22.0 - 32.0	11.35	460.70
OW-16	453.90	18.0 - 28.0	22.53	431.37
OW-17	447.18	11.0 - 21.0	15.91	431.27
OW-18	444.57	11.0 - 21.0	13.45	431.12
OW-19	438.69	5.0 - 15.0	7.92	430.77
OW-21	467.46	37.1 - 47.1	36.17	431.29
OW-22	467.10	38.0 - 48.0	35.83	431.27
OW-23	444.73	29.0 - 39.0	13.58	431.15
OW-24	446.77	14.4 - 24.4	15.70	431.07
OW-25	452.47	20.0 - 30.0	20.93	431.54
SW-1[3]	432.01	-	3.03	428.98
SW-2[3]	432.01	-	0.51	431.50
SW-3[3]	437.44	-	5.00	432.44

Notes:
[1]Data reported in feet; elevations relative - mean sea level; 1988 National Geodetic Vertical Datum.
[2]Top of casing and gauge staff elevations surveyed by Maser Consulting P.A.
[3]Water elevation measured from top of surveyed staff gauge.

Table 3
Summary of Detected TCL Volatile Organic Compounds in Groundwater (ug/L)
May 2006
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Compound	NYSDEC SGV	U.S. EPA MCL	OW-2 05/23/06	OW-5 05/23/06	OW-6 05/23/06	OW-17 05/24/06	OW-23 05/23/06	OW-24 05/24/06	OW-25 05/23/06
Benzene	1 (S)	5	8.0 U	0.69 J	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	5 (S)*	NE	16.0 U	2.0 U	3.3 U	2.0 U	0.31 J	2.0 U	2.0 U
1,2-Dichloroethene (total)	5 (S)*	70	**250**	**20**	**24**	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	5 (S)*	100	8.0 U	1.0 U	1.7 U	1.0 U	0.44 J	0.45 J	1.0 U
Tetrachloroethene	5 (S)*	5	**130**	**5.7**	**39**	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5 (S)*	5	**22**	**2.6**	**7.8**	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2 (S)	2	16.0 U	0.27 J	3.3 U	2.0 U	0.39 J	2.0 U	2.0 U

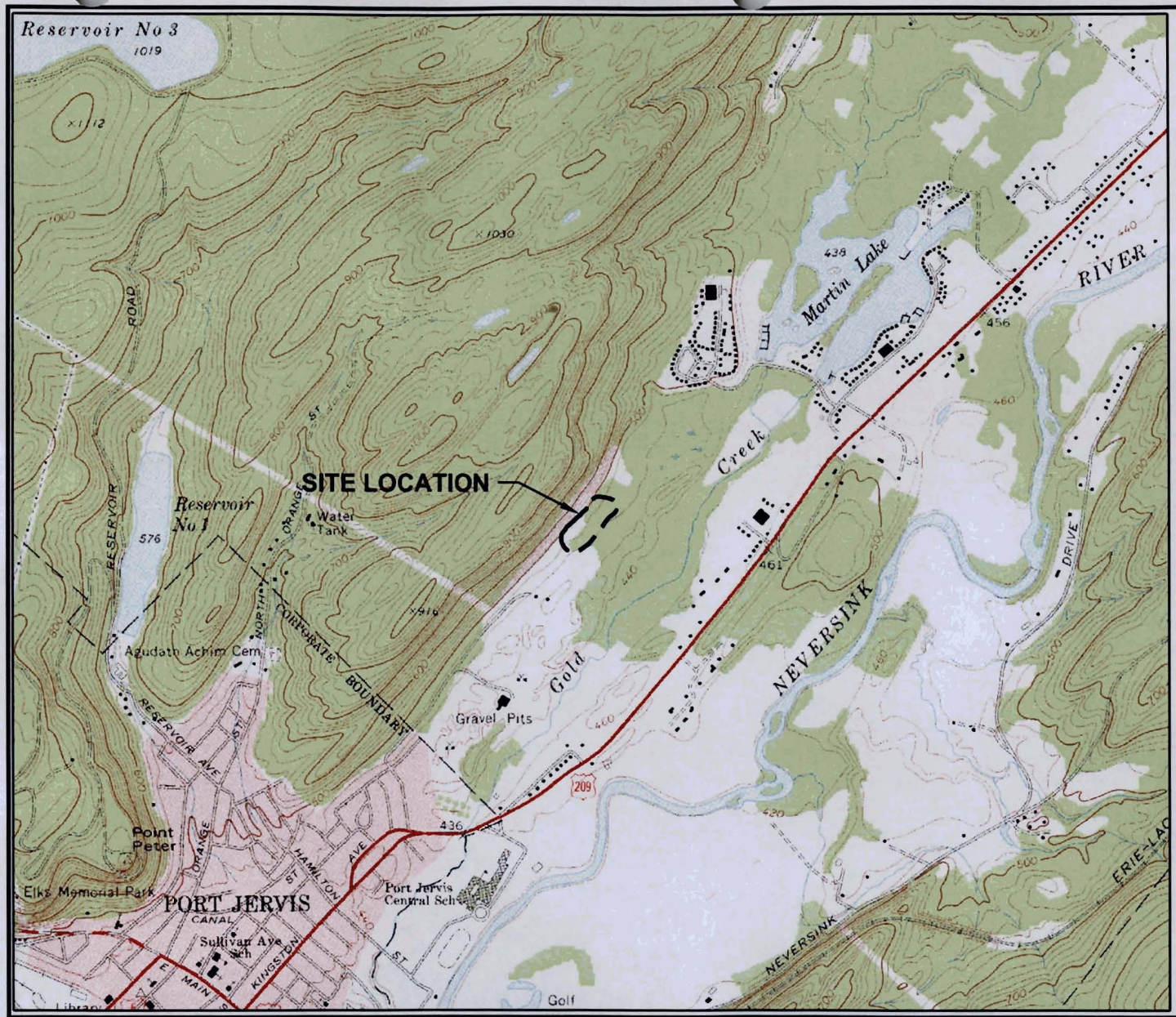
Notes:
TCL = Target Compound List
NYSDEC SGV = New York State Department of Environmental Conservation Standards (S) and Guidance (G) Values for groundwater
U.S. EPA MCL = United States Environmental Protection Agency Maximum Contaminant Level for drinking/groundwater
NE = Not established; no criteria specified
U = The analyte was analyzed for, but was not detected above the reported quantitation limit.
J = Estimated result; result is less than reporting limit
* = The principal organic contaminant (POC) standard for groundwater of 5 ug/L applies to this substance.
Red = Concentrations detected at or above regulatory li
Blue = Analyte detected at less than regulatory limit, or analyte detected but no regulatory criteria specified.
Methylene chloride was detected in OW-2 and OW-6 and acetone was detected in OW-6; however, the results were qualified during the data validation process as not detected (U) at the quantitation limit due to the presence of those compounds in the method blanks.

Table 4
Natural Attenuation Parameters
May 2006
Carroll and Dubies Superfund Site
Town of Deerpark, Orange County, New York

Well ID	Date	Total Alkalinity (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethene (ug/L)	Ferrous Iron (mg/L)*	Methane (ug/L)	Laboratory Nitrate as N (mg/L)	Redox (mV)	Sulfate (mg/L)	Total Sulfide (mg/L)	TOC (mg/L)
OW-2	05/23/06	45	2.8	3.27	0.50 U	0.50 U	0.0	0.50 U	2.9	67.9	24.2	1.0 U	1
OW-5	05/23/06	89	4.7	1.45	0.50 U	0.50 U	0.0	0.20 J	1.2	23.1	49.9	1.0 U	1
OW-6	05/23/06	24	1.0	5.79	0.50 U	0.50 U	0.0	0.50 U	0.29	75.1	21.3	1.0 U	1 U
OW-17	05/24/06	170	5.2	1.02	0.50 U	0.50 U	0.0	47	0.10 U	9.9	26.7	1.0 U	2
OW-23	05/23/06	270	9.6	0.84	0.26 J	0.50 U	2.6	310	0.10 U	-41.5	21.6	1.0 U	3
OW-24	05/24/06	100	1.7	3.52	0.50 U	0.50 U	0.0	0.50 U	0.15	3.8	11.5	1.0 U	1 U
OW-25	05/23/06	48	1.0 U	9.09	0.50 U	0.50 U	0.0	0.50 U	0.20	103.2	10.7	1.0 U	1 U

Notes:
mg/L = milligrams per liter
ug/L = micrograms per liter
mV = milliVolts
TOC = total organic carbon
U = Analyte not detected at method reporting limit.
J = Estimated result; result is less than the reporting limit.
*Ferrous iron was measured in the field (Hach kit).

Figures



2,000' 0 2,000'

SCALE IN FEET

LEGEND:

APPROXIMATE SITE BOUNDARY

SOURCE:

USGS TOPOGRAPHIC QUADRANGLE MAP
PORT JERVIS NORTH, NEW YORK, DATED 1991.

CARDINAL RESOURCES

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK

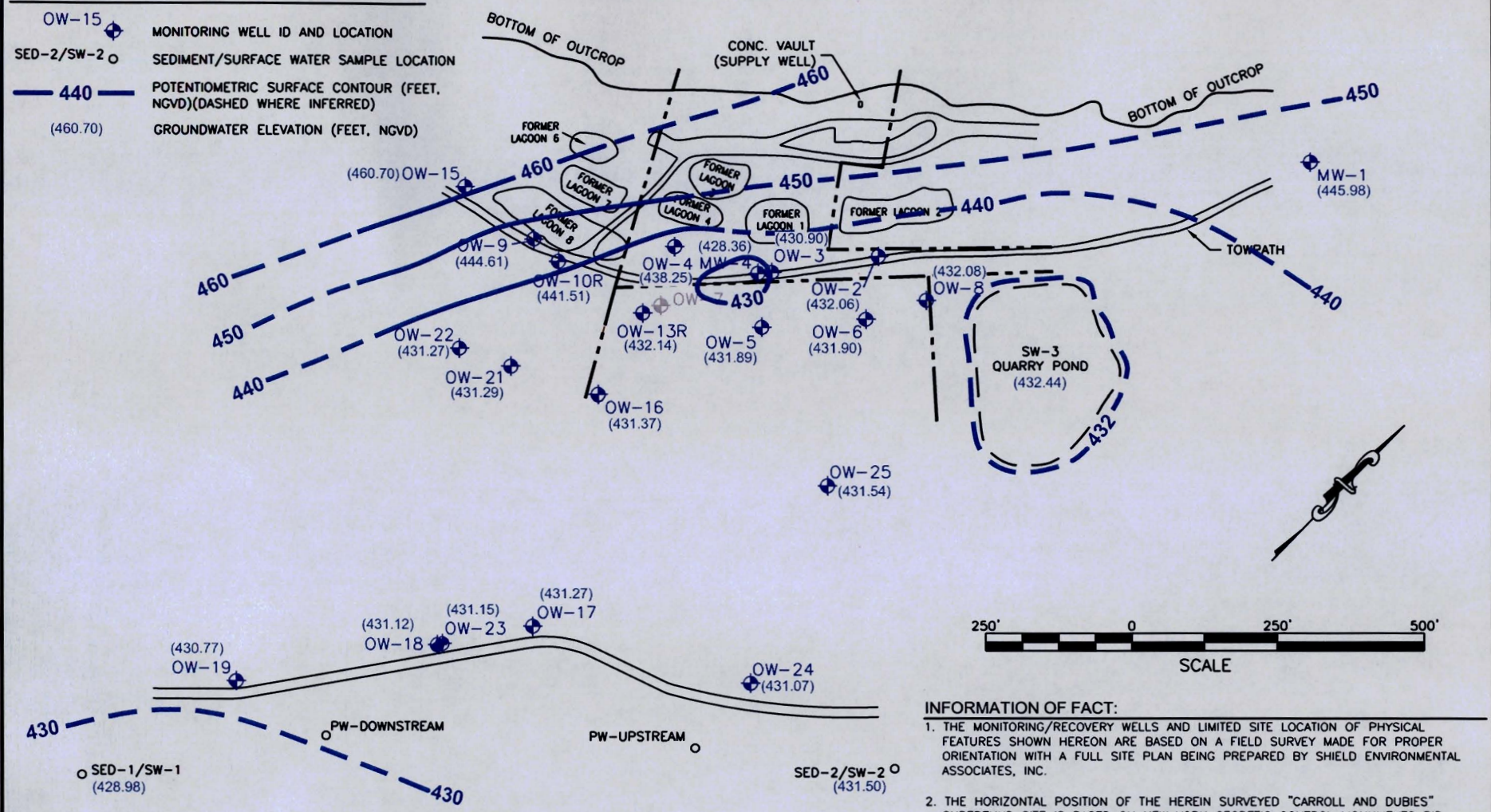
105-0035

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
1							
0	ECM						

FIGURE 1

SITE LOCATION MAP

CADD FILE	9005	SCALE	AS NOTED	CURRENT DATE:	03-07-2005
DRAWING NO.	105-0035-0300-01			REVISION	0



INFORMATION OF FACT:

1. THE MONITORING/RECOVERY WELLS AND LIMITED SITE LOCATION OF PHYSICAL FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY MADE FOR PROPER ORIENTATION WITH A FULL SITE PLAN BEING PREPARED BY SHIELD ENVIRONMENTAL ASSOCIATES, INC.
2. THE HORIZONTAL POSITION OF THE HEREIN SURVEYED "CARROLL AND DUBIES" SUPERFUND SITE IS BASED ON NEW YORK GEODETIC CONTROL MONUMENTS PID # LY2611 (LAUREL) AND PID # AB3870 (DIANNE).

   ADJUSTED TO NAD 1983 WITHIN THE NEW YORK STATE PLANE COORDINATE SYSTEM.

NOTE: THE OUTLINES OF THE FORMER LAGOONS ARE BASED ON THE ACTUAL EXCAVATION.

SOURCE: MASER CONSULTING P.A. MONITORING WELL LOCATION PLAN. INDEXN). SUOOQ9, MARCH 3, 1999.

CARDINAL RESOURCES

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
105-0035

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
1							
0	ECM						

FIGURE 2

GROUNDWATER CONTOUR MAP
MAY 2006

CADD FILE	9240	SCALE	AS NOTED	CURRENT DATE:	06-30-2006
DRAWING NO.	105-0035-0300-02			REVISION	0

LEGEND:

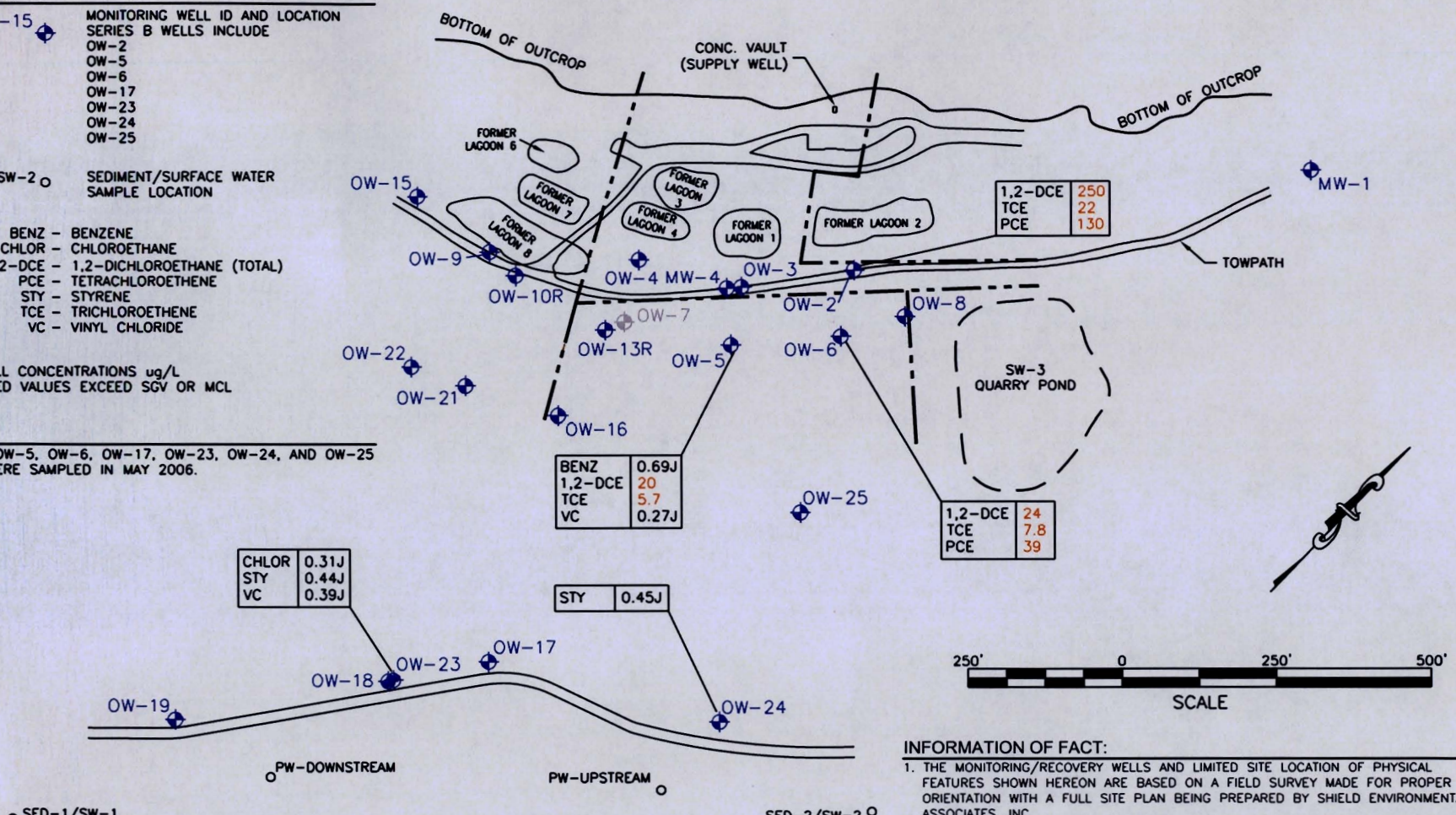
OW-15 ◆ MONITORING WELL ID AND LOCATION
SERIES B WELLS INCLUDE
OW-2
OW-5
OW-6
OW-17
OW-23
OW-24
OW-25

SED-2/SW-2 ○ SEDIMENT/SURFACE WATER SAMPLE LOCATION

BENZ – BENZENE
CHLOR – CHLOROETHANE
1,2-DCE – 1,2-DICHLOROETHANE (TOTAL)
PCE – TETRACHLOROETHENE
STY – STYRENE
TCE – TRICHLOROETHENE
VC – VINYL CHLORIDE

ALL CONCENTRATIONS ug/L
RED VALUES EXCEED SGV OR MCL

NOTE:
OW-2, OW-5, OW-6, OW-17, OW-23, OW-24, AND OW-25 ONLY WERE SAMPLED IN MAY 2006.



INFORMATION OF FACT:

1. THE MONITORING/RECOVERY WELLS AND LIMITED SITE LOCATION OF PHYSICAL FEATURES SHOWN HEREON ARE BASED ON A FIELD SURVEY MADE FOR PROPER ORIENTATION WITH A FULL SITE PLAN BEING PREPARED BY SHIELD ENVIRONMENTAL ASSOCIATES, INC.

2. THE HORIZONTAL POSITION OF THE HEREIN SURVEYED "CARROLL AND DUBIES" SUPERFUND SITE IS BASED ON NEW YORK GEODETIC CONTROL MONUMENTS PID # LY2611 (LAUREL) AND PID # AB3870 (DIANNE).

ADJUSTED TO NAD 1983 WITHIN THE NEW YORK STATE PLANE COORDINATE SYSTEM.

NOTE: THE OUTLINES OF THE FORMER LAGOONS ARE BASED ON THE ACTUAL EXCAVATION.

SOURCE: MASER CONSULTING P.A. MONITORING WELL LOCATION PLAN. INDEXN). SUOOQ9, MARCH 3, 1999.

CARDINAL RESOURCES

CARROLL AND DUBIES SUPERFUND SITE
TOWN OF DEERPARK, ORANGE COUNTY, NEW YORK
105-0035

NO	DRWN	DATE	REVISION	CHKD	DATE	APPVD	DATE
1							
0	ECM						

FIGURE 3
VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
MAY 2006

CADD FILE	9240	SCALE	AS NOTED	CURRENT DATE:	06-30-2006
DRAWING NO.	105-0035-0300-03			REVISION	0

Figure 4
Total Chlorinated VOCs in OW-2 and OW-6

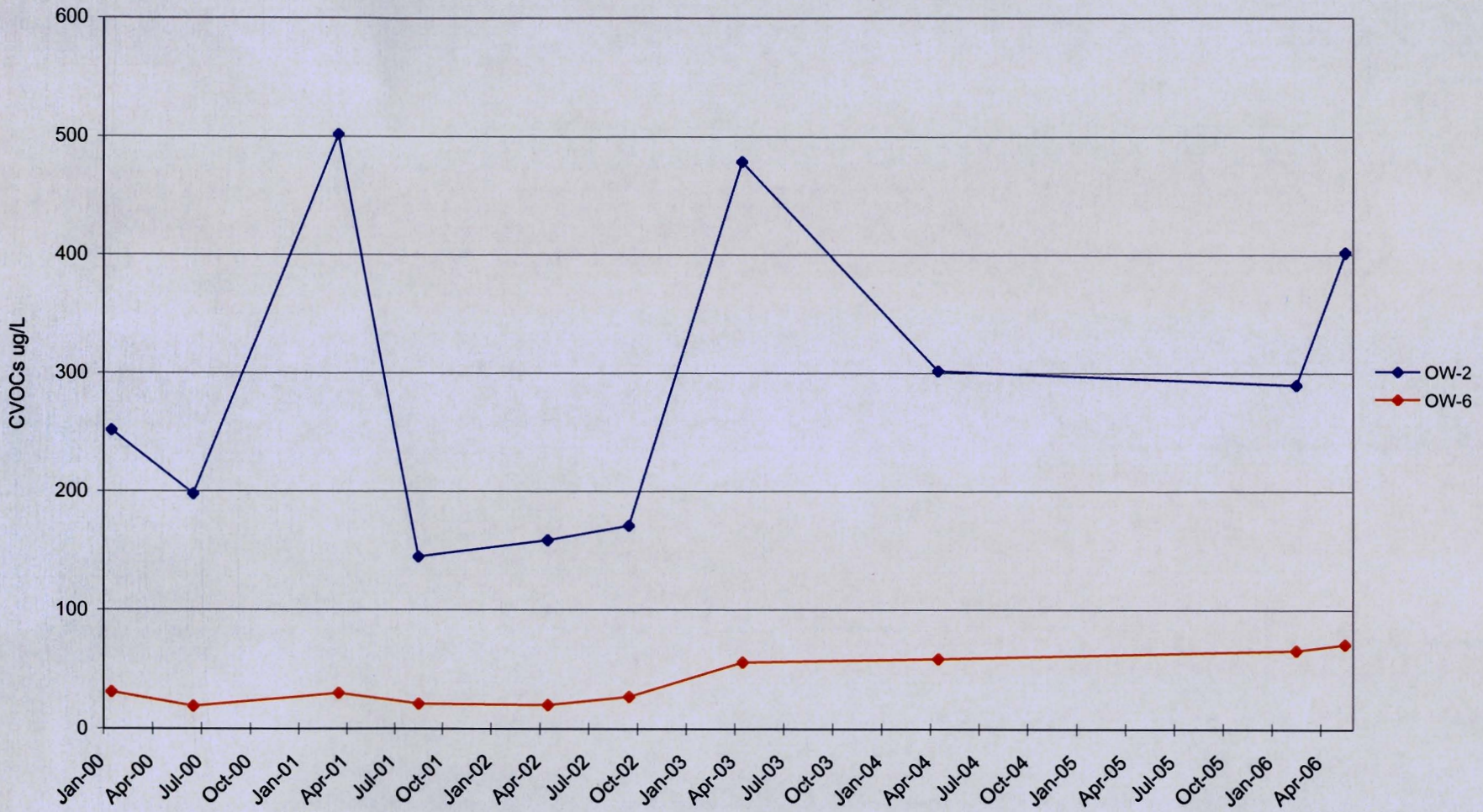


Figure 5
Chlorinated VOC Concentration Trends in OW-5
Pre-Excavation to May 2006